

## Summary of Phosphorus Indices: Management Category Ranges

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The following summary has been prepared based on a state-by-state review of available Phosphorus (P) Indices. The range of P Indices reported in the table below represents the Low to Very High P Index value category ranges. In addition to these categories there are also Medium and High categories for most P Indices.

Each qualitative P Index category (Low, Medium, High, and Very High) has an associated quantitative P Index value range. While the qualitative ranges are fairly uniform as P Indices are examined nationally, there are differences in the associated quantitative ranges. The range of quantitative P Index categories is a generally determined at the state level. However, there has been a decision made between P Index developers in the Northeastern and Mid-Atlantic states that a P Index value of 100 is the lowest value of the Very High category (as reported in the table below). This decision was made to provide consistency in the P Index interpretations and recommendations provided to farmers. Currently, 11 states take this approach.

State	Range of Phosphorus Index Values (Low to Very High)	Phosphorus Index Reference
Alabama	0 to 96	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001. Phosphorus index for Alabama: A planning tool to assess and manage P movement. USDA-NRCS Agronomy Technical Note AL-72. Auburn, Alabama USA.
Alaska	0 to 70	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001. The Alaska phosphorus index. USDA-NRCS Technical Note Agronomy-14. Palmer, Alaska USA.
Arizona	0 to 47	Walther, D., R. Flynn, M. Sporcic, and L. Scheffe. 2000. Draft phosphorus assessment tool for Arizona. USDA-NRCS Technical Note 57. Phoenix, Arizona.
Arkansas	0 to 100	DeLaune, P.B., P.A. Moore Jr., D.E. Carman, T.C. Daniel, and A.N. Sharpley. 2001. Phosphorus Index for Pastures. University of Arkansas, Fayetteville, AR.
Colorado	0 to 16	Sharkoff, J.L., R.M. Waskom, and J.G. Davis. 2000. Colorado phosphorus index risk assessment. USDA-NRCS Agronomy Technical Note CO-95. Lakewood, Colorado USA. (Available on-line at <a href="http://www.co.nrcs.usda.gov/ecs/technotes/coatn_95.pdf">http://www.co.nrcs.usda.gov/ecs/technotes/coatn_95.pdf</a> ; verified 3 September 2002).
Delaware	0 to 100	Sims, J.T. and A.B. Leytem. 2002. The Phosphorus Index: a phosphorus management strategy for Delaware's agricultural soils. Fact Sheet ST-05, Delaware Cooperative Extension Service, Newark, DE.

Florida	0 to 225	U.S. Department of Agriculture-Natural Resource Conservation Service. 2000. The Florida phosphorus index. Florida Agronomy Field Handbook, Chapter 1, Exhibit 9. Gainesville, Florida USA. (Available on-line at <a href="http://www.fl.nrcs.usda.gov/flgeneral/pifinal.pdf">http://www.fl.nrcs.usda.gov/flgeneral/pifinal.pdf</a> ; verified 30 August 2002.)
Georgia	0 to 100	Cabrera, M.L., D.H. Franklin, G.H. Harris, V.H. Jones, H.A. Kuykendall, D.E. Radcliffe, L.M. Rise, and C.C. Truman. 2002. The Georgia phosphorus index. Cooperative Extension Service, Publications Distribution Center, University of Georgia, Athens, Georgia, 4 pp.
Hawaii	Not Available	Not Available
Idaho	Not Available	Not Available
Illinois	Not Applicable – No final P Index value is calculated	USDA-NRCS. 2002. Illinois phosphorus index procedure: Use and interpretation of the Illinois phosphorus assessment procedure. USDA-NRCS conservation practice standard: Nutrient management code 590. Champaign, Illinois.
Indiana	Not Available	Not Available
Iowa	0 to 15	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001. Iowa phosphorus index. USDA-NRCS Technical Note 25. Des Moines, Iowa USA. (Available on-line at <a href="http://www.ia.nrcs.usda.gov/Technical/Phosphorus/phosphorusstandard.htm">http://www.ia.nrcs.usda.gov/Technical/Phosphorus/phosphorusstandard.htm</a> ; verified 30 August 2002.)
Kansas	0 to 600	Davis, B., G.M. Pierzynski, F. Vocasek, L. Freese, and G. Keeler. 1999. Nutrient management in Kansas. <i>In</i> SWCS abstracts, St. Louis, MO. 8-12 July 2000. SWCS, Ankeny, Iowa. (Available on-line at: <a href="http://www.swcs.org/t_publicaffairs_nutmgmt_kansas.htm">http://www.swcs.org/t_publicaffairs_nutmgmt_kansas.htm</a> ; verified 6 November 2002).
Kentucky	0 to 112	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001. Kentucky phosphorus (P) matrix. USDA-NRCS Conservation practice standard: Nutrient management code 590. Lexington, Kentucky USA.
Louisiana	0 to 1800	U.S. Department of Agriculture-Natural Resource Conservation Service. 2000. Phosphorus site index for Louisiana. USDA-NRCS Conservation practice standard: Nutrient management code 590. Alexandria, Louisiana USA.
Maine	Not Applicable – No final P Index value is calculated	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001. Environmental assessment and manure allocation tool. USDA-NRCS Conservation practice standard: Nutrient management code 590. Bangor, Maine USA.
Maryland	0 to 100	Coale, F. 2000. The Maryland phosphorus site index: An overview. Soil Fertility Management SFM-6. University of Maryland, College Park, MD USA. (Available on-line at <a href="http://www.agnr.umd.edu/MCE/Publications/Publication.cfm?ID=537">http://www.agnr.umd.edu/MCE/Publications/Publication.cfm?ID=537</a> ; verified 30 August 2002).
Michigan	Not Available	Grigar, J., D. Pahl, and R.D. von Bernuth. 2002. Instructions for using MARI on Excel. (Available on-line at <a href="http://www.maeap.org/resources.htm#3">http://www.maeap.org/resources.htm#3</a> ; verified 30 October 2002.)
Massachusetts	Not Available	Not Available
Minnesota	Not Applicable – No final P Index value is calculated	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001. Phosphorus loss potential and manure application rates. USDA-NRCS Conservation practice standard: Nutrient management code 590. St. Paul, Minnesota USA.

Mississippi	0 to 22	U.S. Department of Agriculture-Natural Resource Conservation Service. 2000. Phosphorus index rating. USDA-NRCS Conservation practice standard: Nutrient management code 590. Jackson, Mississippi USA.
Missouri	Not Available	Not Available
Montana	0 to 43	Fasching, A. 2001. Phosphorus index assessment fro Montana. USDA-NRCS Technical Note Ecological Sciences Agronomy MT-77. Bozeman, Montana USA.
Nebraska	0 to 47.5	Kucera, M. 2000. Assessing and managing phosphorus loss for manure management. USDA-NRCS Agronomy Technical Note Draft. Lincoln, Nebraska USA.
Nevada	Not Available	Not Available
New Hampshire	0 to 100	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001. Phosphorus index calculation sheet. USDA-NRCS Conservation practice standard: Nutrient management code 590. Durham, New Hampshire USA.
New Jersey	0 to 100	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001. New Jersey phosphorus index for typical crop production systems. USDA-NRCS Conservation practice standard: Nutrient management code 590. Somerset, New Jersey USA.
New Mexico	0 to 47	Flynn, R., M. Sporcic, and L. Scheffe. 2000. Draft Phosphorus Assessment Tool. USDA-NRCS Technical Note Agronomy-57. Albuquerque, New Mexico USA. (Available on-line at <a href="http://www.nm.nrcs.usda.gov/techserv/TechNotes/agro.htm">http://www.nm.nrcs.usda.gov/techserv/TechNotes/agro.htm</a> ; verified 12 July 2002.)
New York	0 to 100	Czymmek, K.J., Q.M. Ketterings, and L. Geohring. 2001. Phosphorus and Agriculture VII: The new phosphorus index for New York State. What's Cropping Up? 11 (4): 1-3. (Available on-line at <a href="http://www.css.cornell.edu/nmsp/projects/pindex.asp">http://www.css.cornell.edu/nmsp/projects/pindex.asp</a> ; verified 30 August 2002).
North Carolina	0 to 100	Havlin, J., S. Hodges, D. Osmond, A. Johnson, D. Crouse, W. Skaggs, R. Evans, J. Parsons, P. Westerman, L. Price, and R. Reich. 2002. Assessing the risk of phosphorus delivery to North Carolina waters. In Proc. of ASAE Annual International Meeting, Chicago, IL. 28-31 July 2002. ASAE, St. Joseph, MI. (Available on-line at: <a href="http://www3.bae.ncsu.edu/SW21/P-session%2064/P-session-64-asae2002.pdf">http://www3.bae.ncsu.edu/SW21/P-session 64/P-session-64-asae2002.pdf</a> ; verified 6 November 2002).
North Dakota	0 to 16	U.S. Department of Agriculture-Natural Resource Conservation Service. 2002. North Dakota phosphorus index screening tool. USDA-NRCS Technical Guide Notice ND-9. Bismarck, North Dakota USA.
Ohio	0 to 45	U.S. Department of Agriculture-Natural Resource Conservation Service. 2002. Phosphorus index risk assessment procedure worksheet. USDA-NRCS Ohio Field Office Technical Guide Section 1. Columbus, Ohio USA.
Oklahoma	Not Applicable – No final P Index value is calculated	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001. Oklahoma phosphorus assessment worksheet. USDA-NRCS Conservation practice standard: Nutrient management code 590. Stillwater, Oklahoma USA.
Oregon	0 to 50 (Western Oregon) 0 to 500 (Eastern Oregon)	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001. The phosphorus index. USDA-NRCS Agronomy Technical Note 26. Portland, Oregon USA. (Available on-line at <a href="ftp://ftp.or.nrcs.usda.gov/pub/agronomy/Phosphorus_Index/">ftp://ftp.or.nrcs.usda.gov/pub/agronomy/Phosphorus_Index/</a> ; verified 30 October 2002).

Pennsylvania	0 to 100	Weld, J.L., D.B. Beegle, W.J. Gburek, P.J.A. Kleinman, and A.N. Sharpley. 2003. The Pennsylvania phosphorus index: Version 1. Publications Distribution Center, Pennsylvania State University, University Park, PA. (Available on-line at <a href="http://panutrientmgmt.cas.psu.edu">panutrientmgmt.cas.psu.edu</a> ; verified 21 December 2003).
Rhode Island	0 to 75*	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001k. Rhode Island phosphorus index (RIPI). USDA-NRCS Rhode Island Field Office Technical Guide Section II. Warwick, Rhode Island USA.
South Carolina	0 to 25	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001l. The phosphorus index: South Carolina. Agricultural waste management field handbook, Chapter 11, South Carolina Supplement 2. Columbia, South Carolina USA.
Tennessee	0 to 301	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001m. Tennessee phosphorus index: A planning tool to assess and manage P movement. USDA-NRCS Nashville, Tennessee USA.
Texas	0 to 32 (East Texas) 0 to 35 (West Texas)	U.S. Department of Agriculture-Natural Resource Conservation Service. 2000. Phosphorus assessment tool for Texas. USDA-NRCS Agronomy Technical Note Number -15. Temple, Texas USA.
Utah	0 to 48	Goodrich, K.I., R.T. Koenig, S.D. Nelson, L.L. Young, N.P. Hansen, and J.W. Hardman. 2000. A procedure for determining best management practices for spreading of manure on agricultural land in Utah, the Utah manure application risk index (UMARI). USDA-NRCS Salt Lake City, Utah.
Vermont	0 to 100	Jokela, W.E. 2000. A phosphorus index for Vermont. P. 302-315. <i>In proc.</i> From Managing nutrients and pathogens from agriculture. Camp Hill, PA. 28-30 Mar., 2000. NRAES-130. Ithaca, NY.
Virginia	0 to 100	Mullins, G., M.L. Wolfe, J. Pease, L. Zelazny, L. Daniels, M. Beck, M. Brosius, A. Vincent, and D. Johns. 2002. Virginia phosphorus index version 1 technical guide. Virginia Polytechnic Institute and State University, Blacksburg, VA USA.
Washington	0 to 50 (Western Washington) 0 to 500 (Eastern Washington)	U.S. Department of Agriculture-Natural Resource Conservation Service. 2001. The phosphorus index. USDA-NRCS Water Quality Technical Note 2. Spokane, Washington USA.
West Virginia	0 to 32	U.S. Department of Agriculture-Natural Resource Conservation Service. 2002. Phosphorus index for nutrient management. USDA-NRCS Conservation practice standard: Nutrient management code 590. Morgantown, West Virginia USA.
Wisconsin	Not available	Jarrell, W. and L. Bundy. 2002. The Wisconsin phosphorus index. University of Wisconsin Madison, WI USA. (Available on-line at: <a href="http://wpindex.soils.wisc.edu/index.html">http://wpindex.soils.wisc.edu/index.html</a> ; verified 4 November 2002).
Wyoming	0 to 35	U.S. Department of Agriculture-Natural Resource Conservation Service. 2002. The phosphorus index. Section 12- Nutrient basis for manure application rates Wyoming comprehensive nutrient management plan workbook. Casper, Wyoming USA.

\* The P Index categories range from Low to High.